MOLLY SUMMERS

The Ascent of Brenchly and Remy to Mauna Loa, Island of Hawai'i

Introduction

Jules Remy, the 19th century French scientist, spent three and a half years in Hawai'i, where he not only followed his scientific studies but also became involved in the legends and the fate of the Native Hawaiian people and published a Hawaiian-French Vocabulary (1852–1856). Remy's research, intended to add to European knowledge of Hawaiian plants, was useful to King Kamehameha III, as Remy collected information on population and agriculture and offered suggestions of possible export crops.

Jules Remy was born September 1, 1826, in Mourmelon-le-Grand, Champagne, to a schoolteacher and his wife. He was sent to a seminary in Chalons-Sur-Marne and eventually to school in Paris where he wrote poetry in the style of Lamartine. In 1848, he was named Professor of Natural History at Rollin College, Paris, and in 1851 was charged with a scientific mission to the Sandwich Islands by the French government.[1]

Relations with the French in Hawai'i were strained at the time of Remy's arrival, on November 7, 1851, aboard the French frigate *Algerie*. Through the kind offices of Robert C. Wyllie,

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Kamehameha III's Minister of Foreign Affairs, however, Remy was presented to the King and the Queen on March 16, 1852. He was well received by the King who issued a proclamation stating that Remy would be travelling through the Islands, "looking at plants, animals, and minerals, with peaceful intent and with love" and that the Frenchman was "under my shadow" and was to be treated with *aloha.*

In Hawai'i, Remy made the acquaintance of the Englishman Julius L. Brenchley. Brenchley, who was born in England in 1816, became the travelling companion of Remy through the Islands and beyond.[2] The Englishman was an impassioned traveller of independent means for whom any adventure was a challenge.

In the years following the Hawaiian adventure recounted here, Brenchley and Remy journeyed together in the United States, Africa, Europe, and Asia. In 1855, they left San Francisco for Utah, entering Salt Lake City on September 23rd. They spent one month in Utah where they were received by the Mormon leader Brigham Young. Remy later wrote *Voyage au Pays des Mormons* (1860), describing the Mormon religion and culture. Remy next visited South America, then went to London to visit Brenchley. Returning to the United States in 1857, Remy explored the Great Lakes. He then rejoined Brenchley, and they visited Algeria, Morocco, Gibralter, Seville, Madrid, and France in 1858 and Rome in 1859. In 1862, they travelled to Hindustan and Tibet, described in Remy's *Visite au Monastere Bouddhiste Pemmiantsi* (1862). Back home in France, Remy wrote *Les Recits d'un Vieux Sauvage* (1859) and *Ka Moolelo Hawaii, Histoire de l'Archipel Hawaiien* (1862).

Julius Brenchley died in 1873. Jules Remy's life came to an end 20 years later, in 1893.

It seems inevitable, looking back on their lives, that Remy and Brenchley, the one an unquenchably curious scientist and the other an insatiable adventurer, should have undertaken the tortuous ascent of Mauna Loa, Hawai'i, where, as Remy wrote, no Hawaiian went and "no more than three or four authentic ascensions [had been] made by foreigners." Remy actually made several previous climbs to lower heights. But the following, a description of the two men's trip to the summit, is an extract from

Remy's journal, published in Paris in French the year before his death as *Ascension de MM. Brenchley et Remy au Maunaloa, Polynesie, Extrait du Journal de M. Jules Remy* (1892).

This translator has greatly enjoyed working with Mr. Remy's prose, as his personal style provides an insight to the daily life of the Hawai'i of Kamehameha III. Some of Remy's comments on the Native Hawaiians are patronizing; this was a common attitude among visitors to Hawai'i and is balanced by his intense interest in helping the people of the Islands.

Remy's botanical nomenclature has been followed in the translation. Appendix I gives the scientific names of the plants found during the trip and will help the modern reader recognize them. Appendix II provides to those interested in following Brenchley and Remy's route up Mauna Loa the key spots cited by the Frenchman.

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June 13, 1853

Rain all day.

After having uselessly tried to repair my compass and having tried with no more success to procure another, I had resigned myself to doing without one when Mr. Mayer, the somewhat ill-favored Englishman, brought me one which his ancient mariner's perspicacity made him discover at a Chinese planter's place. Besides the fact that it was of paramount importance to me, this Asian compass had the merit of interesting me by its particular form, strangely shaped as all that comes from the Heavenly Empire; it's a little ornamental box of lacquered wood, opening

like a snuff-box, profusely decorated inside and out with pictures and hieroglyphs, a true jewel. Can you believe, as I was assured, that an object so seductive, so [well] wrought, costs no more than ten sous at the trinket shops of Amoy or Shanghai?

Mr. Brenchley, delayed by the unexplainable disappearance of his most robust boy, did not arrive at the rendez-vous until noon. I immediately sent off the rest of our baggage, and at prescisely 1 o'clock we ourselves left on horseback, taking the prayers of Father Eustathe, whom we left alone at the mission in Piihonua (Hilo), where he is responsible for reading the barometer three times each day the whole time of my absence. In two hours of steady trot we arrived at Kulukukui, where we left Panaewa forest, and at 6 o'clock, a bit dampened by the rain, we reached the caravansary of Kanekoa. There we found the four porters whom I had sent off the day before yesterday with the order to go and wait for us at the volcano, where we were supposed to sleep tonight in order to start the ascent tomorrow morning. These loafers had stayed at Kanekoa under the pretext that the guide had the order to rejoin us there, actually because they wanted to take part in a feast which the tenant-farmer of the king had prepared as a surprise for us. In order to punish them, our first impulse was to go without and to make them walk quickly before us in the gloom of the night; but our anger did not survive the view of roast pig spread out on a bed of banana leaves, in the middle of the caravansary, which was completely decorated with flowers and boughs. The inhabitants of the neighboring huts, attracted by the hope of some scraps, took their places in a circle around us and regaled us with hula[3] and old poems, of which they chanted each line with the same rhythm.

About 11 o'clock, when I had begun to sleep, I was awakened by piercing cries, which made me think of a murder. The information gotten said it was only a wife whose husband was beating her to make her share the money she got, he said, in exchange for a kukui[4] ring which she had given to Mr. Brenchley. The poor beaten woman, I was desolated to learn, is the mother of the child born the day of my first visit to the volcano, and to whom I had given, with its parents' permission, the name Kilauea.

June 14

All night I heard what the Hawaiians take for the song of the achatinellidae *(pupukanioe)* [land snails], a fairly short musical note, sweet and clear, uniformly repeated at equal intervals, and apparently coming from a thicket alongside the campsite. Not being able to admit without proof that this sound or voice comes from a snail, the presence of which in this region was problematical anyway, I would be tempted to attribute it to some insect that has escaped me to this day, be it an orthopterous like the cricket or a hemipter like the cicada, although it would be impossible to compare the disagreeable song of these insects with the sweet sound of the alleged *pupukanioe.*

The inhabitants of Kanekoa, who seemed so friendly last night, showed us this morning a malice that was inexplicable, unless one sought the cause in a calculated interest, in the set purpose of exploiting our needs. We had supposed that they would voluntarily lend us various objects which we knew they had in abundance, such as ropes, gourds *(huewai),* mats, etc., but we were optimistic. According to them, nothing of what they held was theirs, and they were not allowed to part with it unless it was on a cash basis. Thereby obliged to enter into bargaining with them, we noticed that the word had been sent out to triple the value of their merchandise. After long and useless debate, I got four long-necked gourds which were indispensable to us, and to absolve myself in mine own eyes for such an abuse of power, I gave them a receipt which, if they deemed it appropriate, they could use against me before a magistrate. Our porters and the guide set out on the road at 9 o'clock. We could still see them shaking their gourds and thumbing their noses at their dispossessed compatriots when the latter, already prey to the jeers of their women, and doubtless regarding the game as lost, showed me softened countenances and gave me, at a half-dollar a piece, the gourds for which they had just demanded twice the price.

At 11 o'clock, all things having been settled amiably, we mounted our horses and set out on the trail of our men. The vegetation alongside the route, without being more varied than on

my first voyage, is further advanced, thicker. Those which dominate were still the Byronia, Broussasia, Plantago, *mauulaili,* Astelia, Luzula, Restio and various Compositae (synantherous). Farther, and further up, appeared the raspberry bushes *(akala),* strawberry bush *(ohelo papa),* vaccinium *(ohelo ai), kukaeuau,* a carex. We heard, in the thicket, a bird whose cry reminded us of the cry of a magpie. About a league from Kilauea, we rejoined our porters, lying voluptuously on their stomachs right in the middle of the way, and sleeping so hard that we could have gone by without their noticing us. The air was very heavy, even very hot, beneath a sky covered with clouds which concealed the view of the mountains from us. Our winded horses stumbled with every step, it was for them as well as for us, a veritable relief to reach at last, at about 3 o'clock the edge of Kilauea, where our boys arrived one hour later.

The volcano hadn't changed in aspect, unless it showed a bit more smoke than before. Our shelter had been damaged by visitors who had used it after us; its ramshackle roof opened a large gap to the rain and the wind. We set our men to gather wood, to draw water, and to cut dry grass to replace the mats which we lacked. The wild strawberries were ripe, they were red, rather large, but not very tasty.

A family of Kalapana . . . came to rest near us before going down into the neighboring forest where they were going to look for a *koa* (acacia) trunk which had been cut down two months before and already roughhewn into a canoe by a craftsman. An urchin of this company, two and a half years old, stark naked, taking exception to Mr. Brenchley's staring too long at his person, angrily threw a pebble at him which hit him right in the forehead. Hercules, more dumbfounded than irritated at his wound, started to laugh like everyone else, then ventured to hand his lighted cigar to the horrible child, who took it gravely, put it to his mouth, took two puffs, and then passed it to his mother.

At twilight a mist surrounded us, and turned into a light rain during the evening. Through the shadows of the night, Kilauea let us see two furnaces of light but with no burst of noise. Before going to bed we made a count of our luggage and provisions. We will not lack provisions; we can even, calculating that our expedi-

tion will last five days, leave part of them here to use on our return. After having supped, we now have ten pounds of salt beef, and as much of ham, fourteen Columbia River smoked salmon, nine boxes of various preserves, sixty pounds of *paiai*[5] taro, twelve pounds of bread, a case of crackers, two bottles of cognac, three bottles of syrup, many cakes of tobacco, some cigars, a decanter of a drug of which the Yankees extolled the virtues and which they call pain killer. Add to this wool blankets and five pairs of shoes for each person.

Naipoaloha, our guide, seems to be close to fifty years old. He is more tough than lively and robust, richer in zeal and good intentions than in intelligence. He said, without being able to give many details, that he had gone to the top of Maunaloa three times: the first, with [Lieutenant Charles] Wilkes; the second, with Dr. [Gerrit P.] Judd; and the third, with Mr. [Abner] Wilcox. He was a guide to the latter two. All the natives he met this afternoon treated him as though he were insane when they learned that he was to take us to the summit "where one always dies of cold, thirst, or fatigue."

June 15

Camp at Kilauea (Kukumahunuiakea), 6 a.m., bar. 668.4; therm. 15.3. Sky and earth sunny, a beautiful view of the volcano and its great caldron; summits of mountains capped with clouds. Since the morning we have sent our porters back to Hilo, retaining only one to watch our horses and guard our things and the provisions that we left behind us. When we finished preparing, arranging, and setting everything in order, we ate heartily, except, perhaps, one of our servants who, having neglected to cook his beef, was reduced to eating it raw, which he did, showing more humiliation than repugnance.

. . . we took to the field with four natives in all: Naipoaloha, guide; Keoni, my companion's servant; Kaiana and Kauhai, my two boys from Kailua.

We started out at 7:30 in very good weather. Maunaloa rose

before us in the west, its head uncovered, its flank cut at midslope by a white stratus which ran off onto the sky at the north and south, as if to make us measure all the better the size of the colossus and the magnitude of our task. Passing by the sulfur banks [*la soufrière*], we refilled our gourds at the pond fed by the steam vents [*les foyers de vapeur*]. Mr. Brenchley, not forgetting that he owed the failure of his previous ascensions to the lack of water, did not want to trust his supply to anyone, and carried it on his lower back, attached to a leather belt. After having followed the path to Kau for half an hour, we headed to the right, in the exact direction of the summit of Maunaloa. The region was more flat than hilly, and the terrain being fairly firm everywhere, one didn't need thighs of steel to pass over it. Continuing, we went through, on old *pahoehoe*[6] lava, scattered brush, among which grew a frutescent geranium, the shape of whose leaves made me mistake it on Hualalai for a shrubby tree of the rosaceous family. We next encountered little groves of *koa,* then new shrubby trees before coming upon a fairly long sheet of *pahoehoe,*[6] almost barren, where was seen a cavern that any traveller surprised by the night or by bad weather would find quite habitable. Further on, it was again thickets in the middle of which a mass of *ki (Cordyline terminalis)* attracted our boys, delighted to be able to get leaves to make sandals for themselves in the fashion of Puna. I saw there, in the company of a gnaphalium (genus *luteo-album*?), an unidentifiable orchid, with a green bulb, withered flowers, and split open or withered fruits. It's the third species I've discovered in the archipelago, where one formerly thought that this family was not represented. On leaving the grove, we had to tread on thick gramineous plants *(aira?),* inconvenient and troublesome for walking, that carpeted the ground for a remarkably large zone decorated with handsome forked *koa,* sometimes solitary, sometimes in groups, with emerald green foliage. [The painter] Sawkins caught the character of this landscape well and accurately reproduced its physiognomy in one of his paintings. One could see here and there thin bushes of sandalwood *(Santalum)* and of a ligneous Synantherous *(apiipii).*

While walking, we gathered vaccinium berries and raspberries,

more refereshing than savory. Soon our men began to tire and take advantage of the stops, which they multiplied more than reasonably. Such slowness made me impatient: I feared our expedition would be compromised by it, and the British coolness of my companion did not calm my restlessness at all. Meanwhile, our guide announced that, not having seen the summit of the mountain for some time, he needed to take his bearings. And there we were, while he went off scouting, condemned to undergo an interminable halt! When he came back, the worthy man, he was not very sure of having regained his course; but he had collected in the labyrinth some spines which I charitably removed from his feet.

Continuing our walk a bit at random, we arrived on a mossy soil, where a horse had left the print of its shoes. "Those," our guide told us, "are the marks of the king when he tried to climb the mountain four years ago. I know where we are, we have passed Wilkes' first station. All is well, let us continue." A little further I observed an umbelliferous plant *(Sanicula)* with fragrant yellow flowers, whose leaves, which I had already seen on Hualalai, resembled those of an anemone. We saw again, growing in clumps, luzula, carex (sedges), cyathodes, daphnes, *Kukaeuau*, metrosideros, rubus, fragaria. A bit further, there were *mamane* of a small size, in the middle of a lawn formed of many species of common grasses. We had gotten that far when our boys started again to show signs of indolence or prostration. Every instant we must shake them like an exhausted team [*attelage rendu*]. The guide, for his part, became hesitant again, lost his head or his memory, didn't know anymore which direction to take to get out of a rolling and broken district. Had he tricked me? Had he never come this far? One thing was certain, I no longer had any confidence in him.

Taking hereafter the role of guide, I headed W 1/4 NW, and I took the head of the squad, compass in hand, while Mr. Brenchley brought up the rear. . . . In this new phase of our ascent, we went at a regular pace, the uneveness of the ground being nothing extraordinary, and the ground itself not being too unfavorable for walking. All the same, we were witnesses, if not victims, of a dirty trick which luck or human malice had played us; in less than a quarter hour, the gourds came unfastened one after another

from our servants' *mamaka*[7] and fell to the ground. If, as there was every reason to suspect, the sly foxes had done it on purpose to lessen the weight of their loads, they must have been discomfitted, because only one gourd was cracked by its fall, and that without losing a drop of its contents. What a catastrophe if the plot had succeeded! The gods were definitely with us.

At 7 o'clock, the night having come, we stopped on a velvety lawn, surrounded by a curtain of *koa,* a marvelous bedroom offered by nature to the voyagers. Although we made ten effective hours of walking this day, we had barely ascended, according to the barometer, more than 300 meters above our point of departure. There were therefore about 3,000 meters of elevation that we still had to climb! We lit a fire which allowed the abandoned guide to rejoin us half an hour later. On examining the gourds, I found that each one was missing a bit of water. Keoni swore on the salvation of his soul that he hadn't drunk a single gulp. "And if I were to swear," I told him, "on the salvation of mine that I had. . . ." He didn't give me time to finish, he confessed that he had done as the others, and hitting his chest, treated himself as a blasphemer and a liar. Mr. Brenchley, who has a reputation among the Hawaiians as a patient man who willingly believes in the innocence and irresponsibility of the race, greatly surprised our men tonight by the firmness of his language and the severity of his threats. The unhappy men trembled and dared not offer one word, they who are usually so cheerful, so talkative.

. . . —Lying on the grass, I went to sleep after having taken the precaution of placing all the gourds around me.—The sky was gray, but the air was dry and pleasant.

June 16

Camp, 5:30 a.m., Bar. 642.8; Therm. 13.0. Cloudy sky. On our way at 6:15, after a comfortable, even plentiful breakfast, and it showed in the volume of our provisions. We quickly crossed the upper limit of the *koa,* and found ourselves on rather steep slopes.

Soon appeared the vegetal marvel of the Hawaiian mountains, the *Hinahina* (Candolle's *Argyroxyphium,* Hooker's *Argyrophyton*), which represents here the model of downy compositae *(Culcitium, Espeletia)* of the high Cordilleras of America. This plant, whose flowers I had not yet seen, is truly superb . . . arranged in a pyramidal cluster at the tip of a slender, firm stalk one or two meters tall, silky and silvery like the rosette of long linear leaves (ensiform) from which it emerges. What a beautiful acquisition for our horticulture, for decorating our parks! Unfortunately the seeds, when they don't fail to develop, are eaten by insects attracted by a very particular aroma, analogous to the bouquet of a savory wine punch.

Above the region of the *Hinahina,* which did not seem to me to stretch very far, the vegetation became stunted and slowly disappeared. However one saw a very hardy [*très vivace*] species of raspberry whose fruits, when completely mature, have a blackish tint. Some pretty geese *(Bernicla)* flew in pairs, crying out a song of two long notes (A, F, if I'm not mistaken), which has earned them by onomatopoeia the name of *Nene* [*Branta sandvicensis*].

The birds passed close enough to us for us to see that they were indeed palmipeds. I will not say, as Laurillard had the impiety to say in front of Cuvier about a fish, " . . . Jupiter had drunk champagne the day he created this animal;" but I ask myself why nature gave webbed feet to a bird that does not swim, to whom swimming is even forbidden, since it lives constantly in parts where one seeks in vain the smallest puddle of water. Could there not be here a proof, at least an indication, that there once existed on the mountains and on the high plateau that joins them, lakes or ponds whose beds were filled by the so visible ejections of the volcanoes?—The Hawaiian goose is a too well-valued game to not be destined to an approaching destruction, and it's too bad, because perhaps after numerous generations pass,—if there is still no water,—the bird's feet would lose their fins, and thus the law of adaptation of organs would be confirmed by a phenomenon of retrogradation.

All the time carping on this, we continued to climb the uneven, exhausting gray *pahoehoe* lava, which was, however, much less

formidable than the *aa*[8] lava, happily hardly common on this side of the mountain. Our boys, though all three are very vigorous, weakened visibly, and indicated discouragement. . . .

Mr. Brenchley's boy, Keoni, pretended to be at the end of his tether, and lay down every ten seconds, waiting for someone to force him to get up. In this way, he finally wore out his master's patience and the latter sent him off. . . .

Mr. Brenchley, no longer having a single servant and not wanting to overtax mine, carried his own bedding, not to mention his provision of water, which still hung from his belt. The slope was steep, our step slowed more and more. I feared that our boys might abandon me and reduce us to walking alone towards the goal we had sworn to attain. To encourage them and help them at the same time, I took charge of my gourd, which still contained five out of six liters of water, a truly inconvenient burden in such a place when my arms were already filled with a multitude of instruments. Naipoaloha, who could be of no use to us and who I had twice told to go back, persisted in following us. He joined up with us at one of our halts, weakened, half dead, and asked if one of us would please *lomi*[9] him. Mr. Brenchley yielded to his wish, kneading his muscles in every direction, and revived him. "Now then," I told him, "stop being obstinate, go back to your wife." "Leave it to me," he answered, "don't drive me away, it is for friendship that I don't want to leave you." "As you will!" We still ascended towards WNW, with the compass as a guide, the shape of the mountain no longer letting us see the summit. The vegetation had become extremely rare.

At 7 o'clock we stopped on a more or less broken-up piece of *pahoehoe*. The moon shone above us, while at our feet an ocean of clouds rolled in. The aneroid barometer, paralyzed since 6 o'clock a.m., rested at 640, so that we could not know at which altitude we had arrived. The thermometer showed 9°, a very low temperature for peoples used to the mild climate near the sea. Not one stalk of wood or grass, impossible to make a fire. I was so affected by the cold that I could hardly use my hands to line my clothes, that is to say, to put on pants, and overcoat, and stockings on top of those I already had. We lay down on a bed of pebbles after

wrapping ourselves in our blankets. Thus installed, we opened a tin of preserves, which we ate with great appetite with bread hardened by the dryness of the air. My boys, teeth chattering, bundled themselves in their woolens and lay against each other, having stuffed themselves with *kalo* and ham. Naipoaloha did not rejoin us without difficulty, despite the moonlight; when he arrived, he didn't say a word, he stretched out on the ground without wanting to take any food at all. We heated our fingers at the furnace of our pipes and, sleep not coming, we started to sing, which let us realize the small range of the voice at this elevation. As for our breathing, it was full and easy, without any apparent modification.

June 17

Camp, 5:30 a.m., therm. 4.5. Clouds at our feet; wind from the west, or rather, descending the mountain.

It was not from cold that we suffered in the night, but the roughness of the ground which bruised through our blankets and made us change position at every moment. As I philosophized on this subject and strove to convince my companion that Providence, in refusing us a tolerable bed and in bringing us by that very thing to prefer walking to resting, had given us a visible mark of her protection: "I am willing to believe that," he answered me in a sarcastic tone, "as long as you find a subject of acts of grace in the disaster I am suffering." And saying this, he put his gourd bottom up to show me it was empty. The poor man had placed it too close to himself before falling asleep, and he had just noticed that he had upset it in tossing and turning on his bed, I was going to say on his rack. . . .

We broke camp at 6 o'clock. No more vegetation around us, unless it was a whitish etiolated grass, which became more rare as we rose, and soon disappeared totally. We felt that we were approaching the summit. Already feeling no doubt of victory, we began to experience the drunkeness of it. One perceived snow on

the *aa,* a small distance ahead. This sight reanimated the courage of our islanders, who up until now have shown frightened faces. . . . One of them, Kauhai, being unable to endure his shoes and no longer having any sandals, had completely bloody feet; I gave him his freedom, but he was being proud and took his pain with patience, now that he saw the end of it.

At 8 o'clock we reached the first snow. It was white and hard like refined sugar. After having tried in vain to melt some in water, we ate it to assuage our thirst, rationed since this morning to half a liter per day. My boys, who only knew *hau* (snow) by name, forgot their fatigue to be enraptured by "this thing that is so strange and so clean, which is neither dirt, nor sand, nor lava, which resembles Pele's excrement (sulfur) without its color or odor, which is burning to the mouth and which turns into cold water in the hand, etc., etc."

We continued walking, but on a remarkably smoother slope, on old rust-colored lava. Soon we had to cross a vast field of snow whose whiteness tired our eyes. Suddenly we discovered, in the middle of the *aa,* in a small cavity, enough melted snow to extinguish our thirst and then to fill our gourds. It was, in our situation, better than a gold mine; thus acts of grace were no longer grudgingly given. "Here," maliciously cried Hercules metamorphosed into Candide, "here is without doubt the sufficient reason for my last night's catastrophe! It was, I realize, a favor of Heaven, since it permitted me to climb to the source with less weight on my back."

In seeing the circle that was delineated around us like the circumference of the horizon in the middle of the sea, we comphrehended that we were on the head of Maunaloa, on its large dome, which had the effect of a circular plateau whose curve described our horizon. Finally at 1 o'clock p.m. we arrived at the edge of a pit that stretched beyond eyesight on the plateau. This was Mokuaweoweo, the famous crater that gave birth to Maunaloa which elevated it to 4,200 meters above sea level, and which, according to all appearances, will hardly raise it any higher. We put down our impediments with an inexpressible satisfaction.

Victory was ours, we trod beneath our feet the summit of Maunaloa, a solemn halting place.

Our horizon was still as limited, with the difference that its curve was bitten, toward the north, by the pale crater of Maunakea; but on no side did we see the sea nor any part of the island. Whitish clouds ran across the sky above our heads. Everywhere on the visible ground was a carpet of snow, dotted here and there with black and grey. The sun sent us his most brilliant rays, and nonetheless the atmosphere lacked limpidity, as though it were lightly fogged by the evaporation of the snow. Not a trace of vegetable or animal life, except for a small butterfly who frolicked around us for an instant and disappeared . . . our impression was strange, troubling, painful, assuredly surprise dominated, but it was not admiration that it preceded, it was . . . disappointment: the word is out. Three days of violent, excessive efforts, to attain a summit which is seen from the entire island, and that the natives yet considered inaccessible; . . . to be able there to look out over an enchanted archipelago, over an unlimited wave, and to end up on a narrow, snow-covered, monotonous plateau. . . . what a disappointment! . . .

To our left and quite near Mokuaweoweo another crater, Pohakuohanalei, relatively small although having a circumference of half a league, opened its rounded yaw and showed, on the steep walls of its crater, many horizontal layers, cut at a right angle by a narrow flow of lava which seemed to have come recently from the large neighboring crater. At the bottom of Pohakuohanalei's crater, one discerned an accumulation of snow.

The pit of Mokuaweoweo, bordered with large blocks of lava torn by very apparent clefts, could be two leagues long and one league wide in the widest part of its transversal diameter. It is not as deep as that of Kilauea, but it is certainly vaster, with more sinuous, more irregular contours. In descending, I accidentally slid on the hardened snow and found myself in the blink of an eye at the base of the precipice, flabbergasted by my tumble, quite surprised to have gotten off with a good fright.

The bottom of the vat was filled with a black lava, breaking beneath the feet, covered by a glistening layer that one would

mistake for a layer of tar. In other places, the lava was pumiceous, yellowish with a black crust that was hardly solid. After having crossed the SE point of Mokuaweoweo, I climbed back up on the opposite bank in the direction of smoke that issued from a point situated outside the great pit. I felt quite exposed crossing the slopes of snow in which, no doubt through the action of a subjacent heat, great caves have been formed into galleries. While the sun roasted my head, I had frozen feet. Finally I retreated without damage from the impracticable crater.

On the highest plateau of the mountain, in the neighborhood of Mokuaweoweo, and in a manner of speaking on its border, rises a pretty little red cone, formed of multicolored scoria, and from which came the vapors mixed with smoke that I had perceived. The snow of the plateau disappeared in some places to leave uncovered a completely black lava, with crevasses that vomit burning vapors. Often, above these crevasses, little domes of sulfur and of sulfur crystals are formed. One also sees heaps of very light pumice and pretty red lava which is hopelessly fragile to the collector. Momentarily beaten by fatigue and a headache, I lay down on the edge of a crevasse to warm my feet in the heat of its vapor, and I experienced an almost instant relief. Everywhere the lava was crumbling, and consequently very difficult and dangerous for walking. It seemed generally recent, especially the *pahoehoe,* which is the least solid, and on which we almost broke our legs with every step; therefore, in such places, we threw ourselves on the snow, if it was within reach, because despite its inconveniences it offered us greater security. We came near many smoking vents without seeing any fire anywhere. At a small distance on the large plateau one perceived still other fumeroles, but not a single one in the part of Mokuaweoweo that offered itself to our sight.

We come back to our rest point by going around the crater of Pohakuohanalei. During this journey, the puffed-up lava frequently crumbled beneath our footsteps, exposing us to falls that Mr. Brenchley still couldn't avoid. Lighter or luckier than he, I got out of it with less difficulty and fewer scratches, but with just as sharp a regret to have engaged myself on this wretched passage.

We ended up reaching a hill of resistant *pahoehoe* which we raced

across, and after a few minutes we rejoined our men, asleep on our bags. Naipoaloha, who had stayed behind since 7 o'clock in the morning, and whom we had not thought to see again, just arrived with a find that he made on his way, a stick with a white rag, doubtless one of the signals Wilkes used on his expedition of December 1840 to January 1841 . . . . the poor man was so exhausted that he aroused our pity.

The atmosphere being a bit brighter, we saw on the other side of Pohakuohanalei a big hole that really seemed to be a third crater.

It was 4:30. The wind blew from the east, white clouds glided above us, the thermometer still showed 8 degrees, and already the cold bit us. As tempted as we were to stay on the summit of Maunaloa and to pursue our investigations there, the insufficiency of our provisions was against it, and even prudence made us take the side, painful for explorers, of descending without delay, in order to be able to pass the snows before the end of day.

Quickly, we proceeded to a scanty meal—crackers, sardines—and, halving with our men, we emptied a bottle of cognac. After having inserted a pencilled note into the empty bottle, we placed the latter on a pile of rocks, conspicuous, with the sardine tin, containing a pocket edition of Horace (*Parisiis, e typographiâ regiâ* 1733), enveloped in a silk neckerchief. . . .

The honor of the first [ascent] (January 1834) goes to the Scotsman [David] Douglas, so Mr. Brenchley is not the only son of Albion to have trod the summit of Maunaloa, whereas I can flatter myself to be the only Gaul to have accomplished this small feat. . . .

At 5 o'clock, turning our backs on Mokuaweoweo, we withdrew heading to E 1/4 SE, without worrying about the route we followed in ascending. We briskly crossed the large field of snow, then we continued to descend at a good pace until 7:15, always hoping for the luck of finding a propitious place to sleep. But we had to resign ourselves to camping on *pahoehoe* stones which are quite uneven and very hard. The cold was fairly sharp. To the east we saw an immense arc of marine horizon which seemed to rise higher than us or, to express myself differently, which gave us the impression of being in a hollow ourselves.

White clouds, with forms as strange as they were varied, floated in the distance in the lower regions of the mountain. The coasts of the island showed us many capes that disappeared into space or into the haziness of dusk. We went to bed without delay, having more need of rest than of food.

June 18

Camp, 5:00 a.m., therm. –3.4. Good weather.

The bitterness of the cold and the roughness of our beds made us spend a night as sleepless as it was painful, in which our discomfort was doubled by a feeling of extreme fatigue, which robbed us of the strength to take advantage of a full moon to continue our course. . . .

These night-time miseries sharpened our appetite, we ate, upon getting up, like ogres; unfortunately, we had nothing to drink, the water having frozen in our gourds, a completely new phenomenon for my boys, who shivered in surprise and fear of it. So I explained to them the formation of ice, and one of them, Kaiana, cried, "*Kupanaha!* (it's wonderful!). Heat changes stone to blood (allusion to the incandescent lava), and cold changes water to stone!"

On the march at five thirty on a steep incline, rough and firm, of a relatively easy descent. One saw on the left, above the flow of gray lava that we were walking on, a flow of yellowish white. Flies, real flies *(Musca domestica),* intrigued us by their presence, especially since we hadn't seen any in our ascent. Almost at the same time, we noticed the appearance of some weakly plants, lost sentinels of vegetation on these sterile heights: a grass, some ferns *(Polypodium, Asplenium, Pteris trifida, P. aquilina?),* and two lichens. Lower, a Cyathodes, *Kukaeuau,* a metrosideros . . . appeared, all stunted. Soon we again saw the *Hinahina,* whose flowers of such a comforting odor we inhaled; the Dodonaea, the small *pilo* of the mountains, a Daphnea, a Vaccinium, a Caryophyllaceae, a Restio, a Carex, a Lycopodium, and many grasses. Crossing endless and dangerous *aa,* Mr. Brenchley had the misfortune to

graze the skin on the ridge of his tibia and received a bloody wound. This cursed *aa* stretched to a large bushy area of geranium and metrosideros, from which we emerged only after a thousand irritations, obliged as we were to have the compass constantly in hand, in order not to lose the way in the middle of a fog that prevented us from seeing twenty steps in front of us.

At one o'clock we arrived at the first *koa*. We stopped there for ten minutes, eating raspberries, to wait for Naipoaloha, strayed in the underbrush and calling us at the top of his voice. When we resumed our march, we soon saw no more *koa,* we came again upon *pahoehoe* covered with vaccinium and metrosideros, and that lasted a fairly long time. At the end we reached in earnest the region of *koa* and *pili,* for which we had sighed so. Some *nene* (geese) passed back and forth above us uttering cries, I could say braying, and truly made us regret that we had no gun. In many places the ground was strewn with old extinguished embers, evident traces of the stay made in this area by some caravan. . . . We arrived at a wide prairie formed of a large grass, with which there was no other plant but the *Kukaeuau* (Coprosma [ernodeoides]), with its long branches spread on the ground. One did not expect to see such beautiful pasturage in a land so barren and so thirsty. . . .

The flora of Maunaloa is not rich; it does not add, to my present knowledge, more than a single species to the general catalog of Hawaiian plants. Already poor and thinly sown at the base of the mountain, the vegetation becomes thinner as it climbs, and it stops exhausted, annihilated, above 3,000 meters. The reason for this lies, for the base of the mountain, in the rarity and the poorness of the soil, and for the upper part of the mountain, in the absence of all vegetal ground. One can foretell that it will not always be so: when the interior fires are extinguished, when the craters stop piling vomitus upon vomitus, and the decomposition of the lava has had time to take place, the vegetable life will have more vigor and will advance up to the snow. One can even foresee that one day, in the course of the centuries, instead of the rivers of fire which have flowed so often on the flanks of Maunaloa, one will see flowing rivers of clear water, which will transform

today's desert into fertile and picturesque valleys.

After having crossed the prairie we penetrated into a thicket implanted on old *pahoehoe* lava. That is where we stopped at seven o'clock to camp under a *mamane* (Edwardsia), in a little hollow surrounded by large *koa* and carpeted by a tufted grass. Not having had the prudence to save our water in the day, there was not a drop left us. Thirst tormented us and, for my part, my throat was so dry that I couldn't swallow my food. Our boys had no more food, the cold of the night and morning having, as they say, "eaten with them"; happily, we could give them a part of our provisions without running the risk of starving on the morrow.

June 19

Camp, 5:30 a.m., bar. 664.5; therm. 10.0. Fine and calm. The aneroid barometer stopped being paralyzed after we entered the zone of koa.

Even though we felt the coolness of the night and the grass, which had aggravated the pains we suffered since yesterday in our legs, we bravely broke camp at five thirty. After having crossed a small woods on *aa* mixed with *pahoehoe,* we descended a hill covered with a tall grass *(pili),* from the middle of which emerged here and there clumps of dracoena (cordyline), with some feet of liseron and of cocculus. At the base of the hill we came upon abominable *aa* which we could have avoided by walking further to the east since the morning. . . .

This *aa* dominated a sandy plain upon which we ended up descending and where we saw, not without pleasure, human footprints. Soon we no longer doubted that we were at the end of our misery when we came upon a path—evidently the royal route from Kau to Hilo—barely outlined on a ground sometimes powdery, sometimes hard as metal. We saw here and there spaces covered with little caked balls of sand, joined between them by a softer sand, in such a way as to constitute a terrain that resembles wood cinders, and so easily crumbled that one could not detach

the smallest specimen without crushing it.

No longer afraid of losing ourselves, we hastened our steps on a path which was, moreover, easy, thanks to a light layer of sand laid on old flows of *pahoehoe*. We passed near hillocks formed of grotesque, freakish agglomerations of completely modern lava clinkers; some paltry trees, mostly metrosideros, were scattered to right and to left. Goaded by thirst, I got ahead, I ran; but no matter how much haste I made, the goal, the coveted spring, seemed to get further away, to constantly recede. I finally reached the edge of Kilauea, near its highest escarpments, from which I saw low billows of clouds driven by the wind in the south. After having descended for a quarter hour, I was near enough to our volcano shelter to see its roof. So I headed until I was short of breath towards the steam water the least remote from the path, and I drew water from it in both hands; it was unfortunately so sulfurous that I could hardly drink a few gulps, completely insufficient for my thirst.

Dead tired, ragged, but proud as an ancient victor, I entered our cabin at Kilauea at ten o'clock exact. It was occupied by native travellers who observed the Sabbath repose, some by reading the Bible, some by sleeping pell-mell with pigs, dogs, goats, chickens, and turkeys. Among the sleepers, I recognized first Keoalua, the boy charged with guarding our gear, then the devoted Kauwila, who had come from Kaimu yesterday in the hope of meeting me. . . .

We learned that Princess Victoria Kamamalu spent the day there Thursday, and that the night of the same day the sly Keoni arrived on light feet, having redone in one afternoon, and when he had just sworn that he no longer had the strength to take one step, the path we had so much trouble making him traverse in a day and a half. Mr. Brenchley, a bit surprised but a good loser, insisted on paying as soon as possible the bet that he had lost and dispatched to this end Keoalua to Hilo, with a voucher for five bottles of champagne deliverable as soon as possible to our Kilauea quarters. The messenger hadn't been gone an hour, when his master was edified about his conduct: the rascal, during our ascension, had made one of the horses run so madly that the poor

beast's back and withers were all scraped; in addition, he had broken the rowel of a spur, lost a saddle-girth buckle, burned a surcingle, misappropriated some tobacco and some salmon from our provisions, not to mention many misdeeds of less importance.

A rather thick mist, which dissolved into a very soft drizzle, enveloped us for two hours. When the good weather returned, the volcano showed much more smoke than ordinarily, and the mountains showed their heads above a curtain of clouds of a dazzling whiteness. I took a bath in the basin of a steam vent on the outskirts of the sulfur. At first the water seemed too hot (62 degrees) to me; but after a minute I found it bearable.

Naipoaloha didn't arrive until dusk, twenty-nine hours after we had lost sight of him. He said that his eyes hurt, and from that came his tardiness, doubtless a pretense so as not to admit his fatigue.

Towards sunset Maunaloa, so surly and so sullen seen close up, showed itself, at a distance, full of coquetry and seduction, colored with an agreeable tint of flesh and rose tones. But I know too well what harshness hides itself beneath this gauze, and my porter Kauhai cried, heaving a sigh, "When I have children, I will tell them: never ascend Maunaloa, not even for a thousand dollars!"

While the small drizzling rain fell, I went to visit the people of the caravan beneath the shelter they had built for themselves twenty paces from ours, and I talked with them, answering their rather childish questions, trying to satisfy their curiosity which focused primarily on the goal I had sought "giving myself so much trouble—me, a rich man—to climb up to where a poor man would not care to adventure for lots of money." I sought to interest them by telling them what happened to me in Mokuaweoweo, what I had seen there, what I thought of it, and I ended my chat by announcing that it all made me foresee an eruption near at hand on the summit of the great mountain. Did they understand me? I don't know: the fact is that they no longer interrogated me and that, keeping silent, they seemed to deny me their attention. I was going to retire when a woman of a certain age asked me if I hadn't encountered Pele, goddess of volcanoes. Caught unprepared, I was quite embarrassed. I coughed, I looked at my watch, I lit a cigar,

then I answered in the affirmative, telling myself that after all the Hawaiians are no more naive, believing in Pele, than the Greeks or the Romans believing in Enceladus or in Typhoeus. [Enceladus & Typhoeus were giants buried under the mountains. When they turned, the earth shook.] I therefore dared to answer that I had perceived the goddess in a snow grotto above a steam vent, and I drew a portrait of her copied from the ancient legends with this difference, however, that instead of representing her as a powerful virago, I had the maladroitness, forgetting that this is about an immortal, to age her and to give her an excessive leanness.

My auditors, very attentive this time, did not fail to notice in what way I departed from tradition; but instead of drawing from it an argument against my veracity, they explained the wasting away of the goddess by the fast she was undergoing since the arrival of the missionaries. "Aue!" one of them cried. "Where are you, children of Hawaii? Pele is wasting away! Pele is suffering hunger! Beware lest she become angry and avenge herself! Let us make haste to offer her food and prayer." What happened next? I have no idea; the rain had just stopped, the good weather called me elsewhere.

I thought no more of my neighbors when, towards evening, I saw six of them descend in line into the crater. Too tired to follow them, I sent Kauwila on their trail. As soon as he left, a young girl came to offer me, on behalf of the caravan, a chicken and a stalk of sugar cane, which she laid at my feet without wanting to accept anything whatever in exchange for her present. Kauwila returned after nightfall.

He said that he saw his compatriots throw into the fire of the volcano pig bones, a chicken, some sweet potatoes, some sugar cane, some hair, still other objects, while a sort of priest—the very same individual who had given me the water from his gourd on my arrival—recited a prayer full of incomprehensible words and made wide gestures. I smiled without surprise, for I was not unaware that, despite their apparent conversion, the Hawaiians have not irrevocably broken with the cult of their fathers, and that they continue to practice clandestinely a great number of superstitions. . . .

June 20

Kilauea camp, 5:00 a.m., Barom. 665.5; Therm. 13.3. Clear. 7:30 p.m., Barom. 767.0; Therm. 15.0. Full moon, with black clouds on the horizon.

Fleas made me spend a sleepless night, so I could, from my bed, placed facing the volcano, admire at my leisure a great shower of light and sparks, which gradually faded at the approach of the morning, to no longer show, once the day arrived, more than a dense flaky smoke.—The two little hurts that I brought back from the region of snows,—inflamation of the nose and chapped lips,—were starting to heal; but the fatigue of the legs, especially of the hams, persisted to the point where I limped with difficulty to the pond of sulfurous water, where I wished to take a bath.

At noon, the caravan from Kau broke camp with its menagerie. The hubbub it made leaving awakened Mr. Brenchley, who had slept, the happy man, without intermission since 8:00 p.m. Other travellers arrived from different directions; among them an inhabitant of Oahu come expressly, he said, "to make the acquaintance of the underground fires that his ancestors had the folly to attribute to Pele."

I dismissed Naipoaloha after having reproached him, without ill-humor, for his imposture and his temerity. He now confessed that he had never been on the mountain except as a baggage porter. Having pity on him for the courage he showed, I made him a gift of five dollars, with which he seemed so happy that he no longer wished to leave me.

I tried to sleep in the afternoon, but I did not succeed. I went hobbling along to visit the sulfur bank, where I was indignant to see that someone had broken the handsomest crystals, and that only for the pleasure of destruction. They assured me that it was Princess Victoria's people who were the authors of this vandalism. —On my way I ate some strawberries, and returned to go to bed.—One saw, at night, three glowing furnaces in the crater.

June 21

Kilauea camp, 6:00 a.m., Barom. 665.9; Therm. 15.0. Rainy fog and wind.

After a night tormented like yesterday by fleas and more and more by my nose, whose skin was peeling, causing me a fairly violent pain, I went, as soon as it was morning, to make my toilet at the hot water pool. On my return, I fell down with weariness and, despite the irritation of the flies taking refuge in our shelter during the rain, I slept until noon.

Around 1 o'clock the atmosphere cleansed itself, the sun showed itself and lit the base of Maunaloa. I was going to descend into the crater when the east wind, blowing with a fair amount of force, brought back to us a very thick mist accompanied by a fine, dense rain. No longer being in the mood to wander, I occupied myself with furnishing the cabin with foliage, in hopes that this verdure would serve us as a derivative against flies. Then, while my friend darned his only pants, all cracked with glorious rents, I cooked some *kalo* tubers at the sulphur bank by putting them on top of a steam vent, enveloped in herbage, with dirt on top. The cooking was done almost as quickly as in a native oven, and the odor of sulfur, with which I expected the tubers to be impregnated, seemed nil to me, or at least hardly perceptible.—A salt that I took yesterday in this place, and that I kept in our cabin, was today found to be softened and pasty; put on the fire, it immediately melted, forming large bubbles, and left a white, porous, brittle residue, analogous to a thin and light scoria.

A messenger from Hilo arrived at 5 o'clock, with food and the five bottles of champagne ordered by Mr. Brenchley. Mr. Gaskin, sending us this package, wrote us that smallpox raged on the island of Oahu and that the ministry, accused of not having known to prevent the introduction of the scourge, was menaced with an approaching fall.

The wind increased in the night and became almost violent. It rained, the sky and the earth were black, no light came to us from the volcano. We kept a nice fire, less to warm us than to cheer us, a real bonfire. My boys, who were starting to recover from their

fatigue, gave Kauwila a dramatic recital of their climb, of their miseries on the mountain. I took a lively interest in listening to them. Their description of the snow was particularly long, meticulous; one could see that nothing struck them more. They spoke of the horrible cold of the nights, of the total absence of vegetation on a vast expanse of the upper regions, of the incomparable torment of thirst, all things agreeable to our ears today. . . .

While drinking to the health of the king, Mr. Brenchley was led to tell me a word that Prince Lot[10] let fall, that paints the true person. It was last year, on the shore of Lumahai. My friend, at that time very tied to His Highness, had pointed out to him that his conduct towards me was neither that of a prince nor a gentleman. "What would you?" Lot answered. "It is stronger than I: of the French, I can only stand their drinks and their gay working-girls." The good young man flatters himself, for cognac makes his legs shaky on less than do gin and whiskey.

June 22

I had indeed thought, going to bed, of my last year's invention, the paraflea; but having nothing with which to set it up conveniently, I was again pestered all night by the insufferable parasites, while I heard the wind sough and the rain fall. Hercules, whom the bites of such little animals hardly bother, was deprived of sleep for another reason: his lower lip, still chapped since our ascent and also covered with little white bumps, made him suffer harshly. We got up late, when the good weather had returned. I bathed myself in the hot water of the sulfur bank, which had the virtue of calming my blood and of relaxing me.

At noon we descended into the caldera of Kilauea, whose base we reached in twenty minutes without undue hurry. Walking along the hill of old rocks, we noticed pieces of basalt (?) of a rosy sort, as hard and compact as porphyry, with red, green, and golden crystals. Are these colorations different states of the same mineral, of olivine? Chemistry will tell us. What is certain is that this volcanic rock, if it is not too difficult to shape and polish,

would make material for superb monuments. Continuing to walk on the large sheet of black lava, we encountered curious concretions above the crevasses whence escaped the sulfurous steam. Arriving at the first chimney, it was no longer a question of our scaling it: the surroundings were too dangerous, the lava was boiling with furor and often threw up sprays that kept us at a respectful distance. Between the chimney and the lake, a small hole had opened in the layer of lava that let us see the incandescent matter flow at a speed of two miles per hour.

The chimney that arose last month at the northern extremity of the lake of fire was three quarters demolished. As for the lake itself, it had grown a little and seemed more active. The aspect of the fire there frequently changed. At times the surface was brown and seemed immobile, then suddenly the incandescent material escaped from one point or another, rapidly spread over the solidified crust, melted it and set it in motion in such a way as to establish a general current. Then a spouting surged up and spit a lava of a beautiful light blood red several meters high. The current of igneous matter that crossed the lake was evidently in communication with the first chimney and with the intermediary hole, and was probably no more nor less than the continuation of it. The little escarpment of the opposite bank was carpeted with "Pele's hair," similar to the fine *Usnea* [genus of lichens] that one sees on the branches of the old trees of our European forests. We amused ourselves making the blocks of lava at hand slide into the lake. These blocks stayed for a few seconds as though stuck in the superficial crust, then soon they melted and vanished.

At the other end of the lake we rediscovered the two smoking chimneys that we had observed in our first visits. They presented no change, except that a fairly notable pile of sulfur had been deposited on their scoriae. One of these chimneys showed fire through a lateral orifice, opened two meters above the sheet of black lava. By enlarging this opening with big sticks, we could see the incandescent matter boil and plash.

Pushing further south across noisy, brittle, bloated, black lava, we arrived at a great mound, I dare not say a mountain, formed of lava anterior to the last eruption, and of a gray coloration like

the lava most commonly found on Maunaloa. Here and there one saw blunt hillocks, covered in relief with bowels of bloated sinuous lava. On this big mound existed a considerable depression, a sort of vat, doubtless due to a collapse, and in which one saw spaces whitened by sulfurous steam. Half-way up this mass of lava there was a sort of sulfur crater, full of pretty yellow and white tubular concretions placed in the interior of hollow lava and adhering to its crust. On other big crusts of lava one saw, still in the interior, pretty dendroid concretions, cute and white. We stayed there a long time to choose very fragile samples that we took very carefully in our neckerchiefs, our cravats, and our hats.

Retracing our steps, we lit our tobacco from the fire of the lake, and then we went to enlarge the hole situated between the lake and the first chimney. With our sticks we knocked in the crust in such a manner as to permit our gaze to follow the stream of fire very far, and to perceive incandescent stalactites produced by the melting of the inner face of the crust on which we walked. This explained to me the formation of the stalactites of Hualalai that are so remarkable. The current of liquid fire still advanced in the same direction, boiling at times and at almost regular intervals. The bubbles were generally fairly weak, and most often had the form of white stars on the surface of the melted red matter. Having had the idea of furthur enlarging the hole and giving it the dimensions of a small lake, we verified that we were only supported by a crust a few inches thick. On the inner face of the crusts we had demolished, we found reddish (Van Dyck brown) arborizations, very curious, very thin, very delicate, resembling burnt or encrusted moss, heavy, hard, burning to the touch long after they have been taken away from the fire. This same ferruginous (?) scoria, entirely new to us, carpeted all the free sides of the rocks situated under the recovering crust, in the neighborhood of the stream of fire. Amazed at our discovery, we forgot ourselves for a long time pondering it.

The sulfur vapors, chased towards us by the wind, choked us and prevented us from obtaining rocks where these arborizations took on much more considerable proportions. The rain came in its

turn to thwart us, and finally the approach of night forced us to leave, God knows with what regrets.

Kilauea, as I understand it now, is a relatively young volcano and, even though the islanders agree in saying that it is in repose for the moment, I think it is in the middle of an eruption. Its vomitus have until now been diverted by subterranean canals, sometimes visibly on the Puna coast, as in 1840, sometimes in the sea, invisible but felt, as today. A day will come when the present outlets are obstructed: then one will see the incandescent matter accumulate in the immense vat, fill it, overflow its edges, and eventually form a cone analogous to that of Maunaloa. One needn't be a prophet to predict that things will pass this way, everything indicates and proves it. One can, by the same token, foresee, according to what happened in a NW-SE line from Niihau and Kauai, that the volcanic fires will one day be totally extinguished in the archipelago, and that it is reserved for Kilauea to be the last theater for these great phenomena.

We returned to our shelter after nightfall. Mr. Brenchley, who very benevolently helped me to transport my assortment of scientific specimens, under the burden of which I was sinking, did me the kindness, in the evening, while emptying our last bottle of champagne, of inviting me to install myself at his place at Puueo, where he proposed to sojourn a few months before taking his flight towards the unknown. I regretted not being able to accept his invitation, having no more to do in Hilo, whereas there was much more for me to see in the other parts of the island and also on other islands.

June 23

The fleas, sated with my blood, finally let me sleep. I went to bathe one last time in the reservoir of hot water, where I ascertained that the thermometer rose to 97° under the steam jet, to 65° in the middle of the pond, and to 54° on the edge farthest from the jet. I also made a last visit to the sulfur bank to gather, among other curiosities, a specimen of red, easily crumbled earth.

Two caravans, one of 26 people coming from Hilo, the other less numerous coming from Kau, arrived at almost the same time, and made a halt near our shelter. Three old men from the Hilo caravan descended into the crater with packets in their hands. "Are they, then, going fishing in the lake of fire?" I laughingly said to a young man who was acting eager around me. "It's just the contrary," he responded, giving himself the airs of being strong-minded, "they're going to scatter fish, they are idolaters!"

Around 10 o'clock, we set out on the route to Hilo, while the brave and devoted Kauwila returned to Kaimu, after having worked to make himself useful 'til the last moment. Our horses, lamed after the crazy race a worthless boy had made them run during our absence, were very sensitive to the stones of the path and completely insensible to our spurs: so we did not reach Kanekoa until 2 o'clock. There we surprised the population in the first dread caused by the measures ordered by the authorities with the aim to prevent the invasion of smallpox. While Mr. Brenchley regaled himself with *poi*[11] and salt, I slept until the moment when Naipoaloha came to wake me to make me his profession of friendship and to ask me for an eye-wash, claiming that he saw badly since his return from Maunaloa.

At 4 o'clock we were back in the saddle. Our mounts did not cease driving us to despair with their slowness and making us regret not being on foot. Approaching the forest, I saw on the path clumps of *pia* (Tacca) and of *awapuhi* (Zingiber) that had formerly escaped me. At night (7:30), we arrived at Kulukukui, where they offered us all they had in the way of food, a little *poi* with some moldy goat fat. While waiting for the moon to rise and permit us to finish our trip, we smoked a pipe, and the saddled horses browsed the grass under the coconut trees.

Our hosts were indefatiguable talkers. They showed themselves to be curious to know what we thought about a plan of marriage between Princess Victoria Kamamalu and the son of Dr. Judd. When they had been assured of our indifference on the subject, they decided to show their own feelings, to tell us that they, as well as the chiefs, would prefer to see the princess marry William Lunalilo,[12] the son of Kanaina. Unfortunately Kamamalu, it

seemed, rejects this alliance with horror, because the young chief is addicted to *rama* (rum).—Our hosts' light having gone out for lack of fuel, cockroaches profited by the darkness to invade the hut. Thus one scourge succeeded another: elsewhere it was a scentless vermin; here, it was stinking cockroaches.

June 24

Around 9 o'clock, we went away from Kulukukui. We heard the chirping of birds in the forest. I reaped, on the way, some specimens of *Ape* (Colocasia), a sort of giant wild *kalo,* whose flowers give off a disagreeable odor.

At 11 o'clock, leaving the forest, we were assailed by a beating rain and forced to take refuge in a hut at Puaaloa, whose inhabitants hurried to offer us *poi* and dried goat. These good fellows claimed to know us: I heard them say in a low voice that I was one of the greatest chiefs of France, and that my companion was no more nor less than the king of England in person!

As soon as the downpour had passed we pursued our course, splashing in the mud all the way to Waiakea, where we arrived at 2 o'clock. Some women came before us with crowns of roses with which they begged us to adorn our hats. Thus adorned, on limping horses, we made our triumphant entry to the Catholic mission of Piihonua. Father Eustathe, who we found at home alone,—his colleague, Father Pouzot, not having returned yet from Kau,—went through fire to make us a meal that he shared with us, all the while recounting the political and other news, without forgetting to tell us that since our departure it had rained without cease. On the island of Oahu, smallpox had decimated the natives, and had only very rarely struck foreigners; in Hilo the epidemic started by only striking the latter, at least the first three sufferers to enter the hospital were Anglo-Americans.

After dinner, Mr. Brenchley returned to his cottage at Puueo in the company of his Portuguese major domo, who came running to meet him to complain, tears in his eyes, of the three boys who stayed with him during the absence of their master.

Our porters didn't arrive until evening, crushed under the weight of my collections and dying of hunger. If one were to believe them, they were unable to buy food at any price on the whole road from the volcano.

NOTES

[1] Private collection—Jules Remy, M-125, AH.
[2] Private collection—Julius Brenchley, M-125, AH.

Remy's notes follow:

[3] *Hula*, dance, ballet, song accompanied by movements of the body and arms.
[4] Fruit of the Aleurites, a sort of candle nut.
[5] Tubers of the *kalo* or *taro* (*Arum esculentum* Lin.) cooked and pressed into packets.
[6] Solid lava coming from slow flows, continuous, somewhat smooth, somewhat rough, but without jagged edges capable of wounding the feet.
[7] Stick or balancing pole carried on the shoulder and at the extremities of which one suspends loads.
[8] Piles of clumps of irregular, very hard lava, prickly with many jagged edges on all sides, resembling great chunks of slag. American clinkers.
[9] *lomi, lomilomi* name of the common massage in all Polynesia. From which the verb "to lomi."
[10] He reigned, under the name of Kamehameha V, from 1863 to 1872.
[11] A dough which replaces bread, made of *kalo* cooked and mixed with a little water.
[12] He reigned after Kamehameha V, immediately before Kalakaua.

APPENDIX I

Compiled by Dr. Charles Lamoureux

PLANT NAMES FROM THE ASCENT TO MAUNA LOA BY BRENCHLEY AND REMY

Plants are listed in order of first appearance in the text, with names used by Remy in boldface. Hawaiian names have been spelled according to the *Hawaiian Dictionary* (1975) by Mary Pukui and Samuel Elbert. Modern scientific names are as found in *List and Summary of the Flowering Plants in the Hawaiian Islands* (1973) by Harold St. John, Pacific Tropical Botanical Gardens Memoir No. 1, with fern names as found in *In Gardens of Hawaii* (1965) by Marie C. Neal. This chart is intended as an aid rather than as an authority.

Hawaiian Name	*Common Name*	*Remy Scientific*	*Modern Scientific*
kukui	**candlenut**	**Aleurites**	*Aleurites moluccana*
kāwa'u	holly	**Byronia**	*Ilex anomala*
kanawao	...	**Broussasia**	*Broussasia arguta*
...	...	**Plantago**	*Plantago* sp
mau'ulā'ili	iris	...	*Sisyrinchium acre*
pa'iniu	lily	**Astelia**	*Astelia* sp
...	...	**Luzula**	*Luzula hawaiiensis*
...	...	**Restio**[1]	...
...	...	**Compositae**	family Compositae
'ākala	**raspberry**	**rubus**	*Rubus hawaiiensis*
'ohelo papa	**strawberry**	**fragaria**	*Fragaria chiloensis*
'ōhelo 'ai	...	**vaccinium**	*Vaccinium reticulatum*

Hawaiian Name	*Common Name*	*Remy Scientific*	*Modern Scientific*
kūkaeʻuaʻu	...	**Coprosma**	*Coprosma ernodeoides*
...	...	**Carex**	family Cyperaceae
koa	koa	**Acacia**	*Acacia koa*
kalo	**taro**	**Arum esculentum Lin.**	*Colocasia esculenta*
noho anu	**geranium**	**Geranium floribus albis**	*Geranium cuneatum*
kī	ti	**Cordyline terminalis**	*Cordyline terminalis*
ʻenaʻena	**gnaphalium**	**G. luteo-album(?)**	*Gnaphalium sandwicensium*
...	**orchid**[2]	...	...
...	**grass**	**Aira(?)**	*Deschampsia australis*
ʻiliahi	**sandalwood**	**santalum**	*Santalum* sp[3]
apiipii	...	**ligneous synantherous**[4]	...
...	sanicle	**sanicula**	*Sanicula sandwicensis*
pūkiawe	...	**cyathode**	*Styphelia tameiameiae*
ʻākia	...	**daphne**	*Wikstroemia* sp
ʻōhiʻa	lehua	**metrosideros**	*Metrosideros collina*
māmane	...	**Edwardsia**	*Sophora chrysophylla*
hinahina	...	**Argyroxyphium Argyrophyton**	*Argyroxyphium* sp
...	...	**gramineae**	family Gramineae
ʻae	**fern**[5]	**Polypodium**	*Polypodium pellucidum*

Hawaiian Name	*Common Name*	*Remy Scientific*	*Modern Scientific*
...	**fern**[6]	**Asplenium**	*Asplenium* sp[7]
...	**fern**	**Pteris trifida**	*Pteris* sp[8]
kīlau	**fern**[9]	**P. aquilina(?)**	*Pteridium aquilinum*
ʻaʻaliʻi	...	**Dodonaea**	*Dodonaea eriocarpa*
pilo	...	...	*Coprosma montana*
...	catchfly	**Caryophyllaceae**	*Silene* sp
wāwaeʻiole	club moss	**Lycopodium**	*Lycopodium venustulum*
pili	...	**graminae**	*Heteropogon contortus*
...	**dracoena**	**cordyline**	*Cordyline* spp
...	...	**liseron**[10]	...
huehue	...	**cocculus**	*Cocculus ferrandianus*
pia	arrowroot	**Tacca**	*Tacca leontopetaloides*
ʻawapuhi	ginger	**Zingiber**	*Zingiber zerumbet*
ʻape	...	**Colocasia**	*Alocasia macrorrhiza*

[1] Restio, a genus of the Restionaceae, a family not known from Hawaiʻi. It is the family next to the sedges, however, and what Remy probably meant was the big sedge *Machaerina angustifolia* (ʻuki), which is very common around Kilauea and could be perhaps mistaken for a Restio.

[2] Orchid with a green bulb, probably *Liparis hawaiiensis*.

[3] *Santalum* sp, most likely *Santalum paniculatum* (the species at Kīlauea).

[4] ʻĀpiʻipiʻi is an alternate spelling for ʻape (Alocasia). Ligneous is an adjective meaning woody. The word Synantherae was used in France a century ago as the name of the Compositae (sunflower family). The two descriptions together could refer to the ʻape, but it does not grow in this area. ʻApiʻipiʻi is a mystery.

[5] *Polypodium pellucidum,* known as polypody.

[6] Remy's "fern" is a spleenwort.

[7] *Asplenium,* either *A. trichomanes* (ʻowāliʻi) or *A. adiantum-nigrum* (ʻiwaʻiwa).

[8] *Pteris* sp is either *Pteris cretica* (ʻowāliʻi), or, more likely *Pellaea ternifolia* (laukāhi).

[9] Remy's fern is probably a bracken.

[10] Liseron is a French common name for morning glory. Here Remy probably saw koali, *Ipomoea congesta*.

APPENDIX II

Compiled by Catherine C. Summers

MAP SITES OF BRENCHLEY AND REMY'S PATH UP MAUNA LOA

Place	*Date*
Piihonua (Hilo)	June 13
Kulukukui 3 p.m. left Panaewa forest	
Kanekoa 6 p.m.	
Edge of Kilauea 3 p.m.	June 14
Camp at Kilauea (Kukumahuhuiakea)	June 15
Followed path to Kau 1/2 hr, then headed right	
Headed W 1/4 NW	
Stopped 7 p.m. Ascended 300m, 300m to ascend, and crossed upper limits of *koa*	June 16
Aa not common	
Ascend WNW, no grass or wood	
Snow on *aa*	June 17
Head of Maunaloa	
Mokuaweoweo 4,200m	
Pohakuohanalei crater to the left	
Crossed SE point of Mokuaweoweo	
Came back to rest point by going around Pohakuohanalei crater; found signal from Wilkes expedition	
Other side of Pohakuohanalei another crater?	
Descend heading E 1/4 SE, not the ascent route	June 18
Aa and plants	
First *koa* and raspberries	
Vegetation stops at 3,000m	

Place	*Date*
Crossed prairie	
Camped under *mamane*	
Aa could have been avoided by walking east	June
Sandy plain and human foot prints, Kau-Hilo path	
Edge of Kilauea	
Kilauea camp	June 20